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ABSTRACT

The creative management of change in a time of economic contraction requires planning reforms. Organizing for effective planning requires a total conceptual framework beginning with a stated mission and ending with a systematic approach to operations. Goals should be based on a market analysis of community educational needs and its translation into an operational plan describing staff functions. Since planning is only as effective as the quality and comprehensiveness of the data on which it is based, the development of a quality evaluation system is essential to the success of any long-range development plan. The conversion of evaluation data into planning concepts is the crux of this institutional development plan. Evaluation criteria must be identified that can be used to determine the extent to which alternative methods are successful in achieving planning objectives. Once data are in hand regarding program outcomes, management guidelines are necessary for their translation into planning alternatives. This involves system-wide priorities and requires that administrators maintain some form of decision making apparatus for the conversion of data into action. Thus, the community college is provided with alternatives for development that will help it to adjust to changing social conditions. The model is presented in flow charts, and a list of evaluation data components is appended. (Author/NHM)

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Conceptual Requirements for a Plan of Institutional Development: Answering the Unanswerable

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Community colleges have multiple roots. Historical developments such as the Morrill Act of 1862 authorizing land grant institutions; the bifurcated university movement at the turn of the century; the California Master Plan for higher education; and the development of the comprehensive high schools, had a profound effect on public two-year institutions. The trend toward equalization of access in American society has been an equally important influence. As massive federal assistance was made available to returning service personnel, to technical institutions, and to economically disadvantaged students, the inevitable result was an increase in demand for education beyond high school. The community colleges of today are largely a product of this demand.

The Legacy of Growth

Initially contrived by local communities as "safe" institutions in which students could economically obtain the advantages of advanced certification without exposure to the ravages or distractions of the youth culture, these colleges have grown rapidly in size and stature. At the turn of the century, there were only a few community college students. By 1960 more than 600,000 were

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enrolled and by 1969 their numbers had grown to almost two million, including full-time and part-time students. Prebaccalaureate students now account for nearly 30 percent of all undergraduates and 25 percent of all college students in the nation.

During the decade of the 60's growth was not limited to enrollment alone. The number of colleges increased by 61 percent and the number of staff by 327 percent. Educational energies were exhausted in attempts to keep up with increasing numbers of students. New programs were launched; new facilities were located and constructed; and new structures were hastily planned to involve the community, the faculty, and the students in decision making. The excitement and the hopefulness that accompanied this decade was reflected in the actions of the community and agencies of state and local government. There was increasing committment to the concept of a partnership among state, locality, and students in sharing the operational costs of running a college, and the federal government, state and locality in sharing the costs of capital construction. As institutions grew in size and stature, local tax support increased proportionally and state finance formulas were adjusted to meet shifting institutional needs. The result was a sequence of events that met or exceeded the growth needs of two-year colleges and communicated their importance to a nation-wide audience.

Higher Education in Transition

Extensive change and intensive examination have marked the decade of the 70's. The growth trend has begun to level off, or at least, to slow down. Traditional programs, purposes and goals

have been challenged, altered, and, in some instances, replaced. There are new constituencies and revitalized older ones.

The communities outside of colleges and the diverse groups within have come to express different means of reaching similar goals. The multiplicity of expectations and the plurality of value systems involved have resulted in a degree of indecisiveness among faculty and administrators about which goals to pursue. Furthermore, there is a widespread belief that increasing enrollments no longer constitute evidence of effectiveness. Quality, from this point of view, does not depend on the number of students, on the diversity or programs, or on the expansiveness of facilities, but on the ability of the staff and on the outputs of education.

Complicating the task of the 70's has been the financial crisis that has befallen many of our institutions. Faced with reductions in federal appropriations, financial stringency in many of the states, and increasing reluctance of voters to approve additional taxes, broader financial support will be necessary to maintain or increase the level of existing programs. This has led to an appeal for state agencies to assume a larger share of the responsibility for financing two-year colleges. As state support has increased, so too has the pressure for accountability. A constructive process for institutions accustomed to a meritocratic style of operation, accountability has deleterious effects for two-year colleges. They are non-traditional in both the program and operational sectors and require non-traditional measures to profit from state systems of control. The insensitivity of many state agencies to this need casts into doubt the effect of increased support without corre-

sponding adjustments in the formulas for resource allocation.

Conceptual Base for Planning

Both periods of development--the 1960's and the 1970's--involve conditions that are extreme; each decade is a limited and transient reflection of immediate short-run concerns that have challenged the existing balance within institutions. The rate of growth of programs and facilities in the early 1960's clearly could not be maintained for long, even in a prosperous economy, and it was clear from the mid-1950's on that the rapid growth in enrollments due to high post-war birth rates was bound to be followed by at least a relative trough. Similarly today, the financial exigencies of economic recession are not necessarily harbingers of a new permanent condition, nor is public disaffection with higher education likely to increase significantly.

The concept of "steady state" is often used to refer to the current condition. Called upon to respond to conditions of acceleration and growth in the previous decade, community colleges will have to respond to deceleration and possible contraction in the decade ahead. Their resilience will be tested in terms of their ability to respond to a series of catalytic shocks such as those apparent in the trend toward decreased financial support; the onslaught of new learners into the educational system; increasing competition for tax-base revenues; the loss of public confidence in higher education; increasing demands for accountability; concentration of power for operating decisions in state agencies; and increasing competition for career educational programs. These trends

are not symmetrical for fixed plant and tenured faculty make change a variable process for different institutions. But the steady state does reward organized planning--it provides community college administrators with an opportunity to systematically organize their institutions. In a time of contraction the creative management of change is a different and more exacting task than creative leadership in a period of expansion.

To cope with the uncertainties of the steady state, planning reforms will be required that introduce some basic form of control over the many extraneous factors that can influence institutional goals and purposes. In an era of change, administrators are willing to examine programs and policies with a rigor that has heretofore not existed. They also are willing to make educational purposes more explicit and to think consciously and systematically about alternative futures. Planning has the potential to revolutionize the current structure of institutional management, but for this to occur, elements of institutional functioning and system-wide goals must be better understood.

Planning is a process of designing structures, mapping channels for the flow of resources, and encouraging changes in behavior to coincide with ideas about what the institution should be doing and how it can best do what it says it wants to do. It can be organized in a variety of ways, a plan for institutional development being one of them, and it is translated from an abstract pattern for the future into actuality through a continuous process of institutionalization.

The institutionalization of planning presents the college with an opportunity to examine and, as necessary, to change the decisions

which affect central purposes and goals as well as to change the methods by which these decisions are made--that is to alter the structure of the decision making process. To be effective, a community college must have a discernible pattern of behavior since it is first an organizational gestalt composed of many distinct stimuli requiring timely responses the aggregate of which moves the institution in pursuit of its goals. Planning supports this concept by providing two essential conditions for institutional development: First, it involves the establishment of system-wide goals (i.e., goal-setting) and second, the examination of these goals in the context of system-wide activities (i.e., evaluation).

The educational enterprise is a dynamic process intended to produce certain desired outcomes in students. It is guided by objectives which are a source of direction for programs and staff as well as the basis for determining the effectiveness with which resources are used. The application of system-wide goals to known activities within the institution--a schematic of institutional functioning it is called--is the conceptual foundation for the institutional development plan. Measures of institutional functioning (i.e., student outcomes, unit cost, curriculum effectiveness, facilities utilization patterns, staffing ratios, etc.) can be used to assess the educational process at various points in time and at different levels of analysis. The application of these measures to institutional goals in a comprehensive evaluation model is the starting point for planning.

Figure I represents a diagram of the relationship between institutional goals and function measures in the planning process.

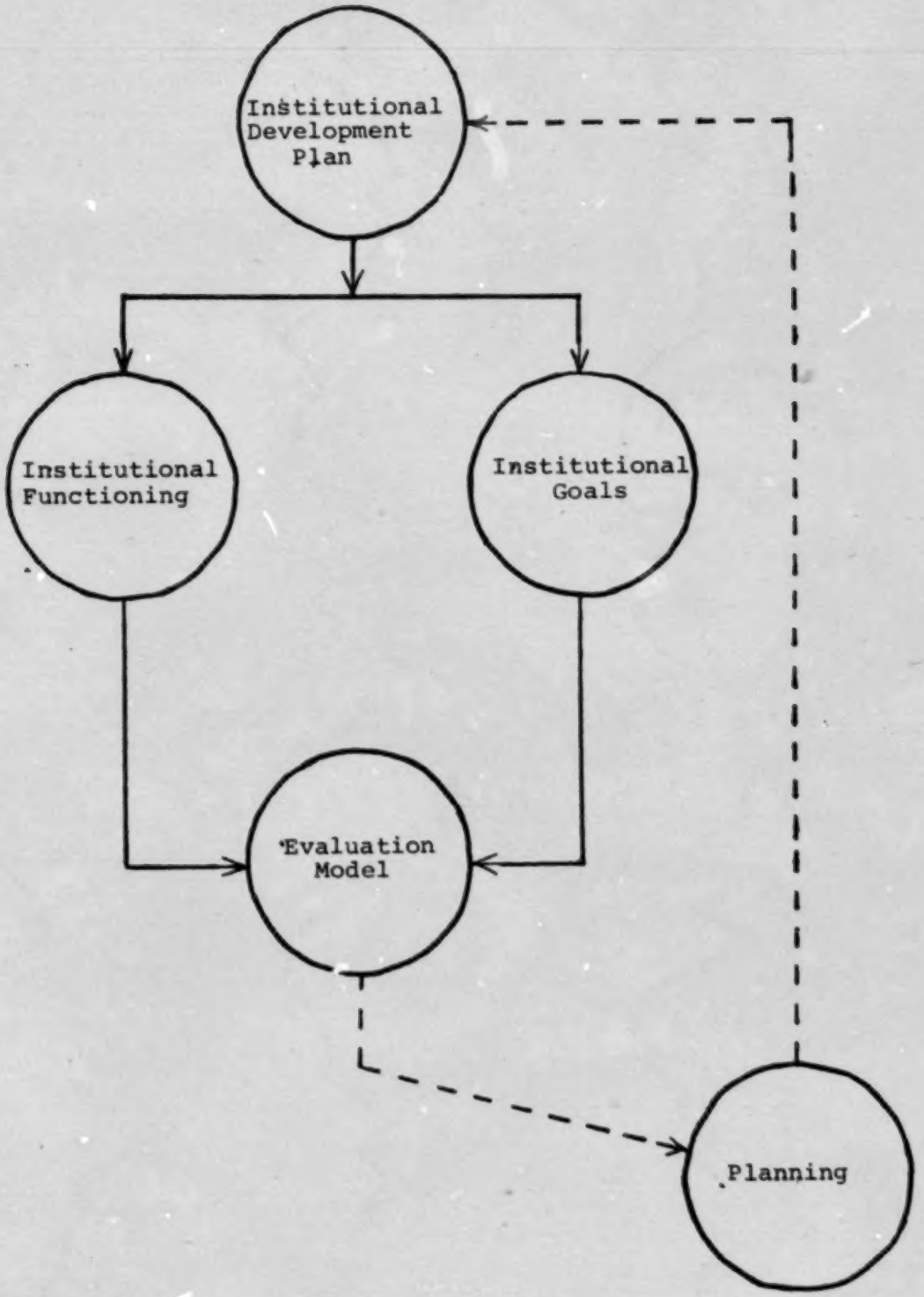

Figure I. Stages in the Planning Process

This diagram emphasizes the importance of evaluation data as a necessary prerequisite for effective planning. The linkage between goal setting, planning and evaluation in higher education institutions has never been more critical. Any plan for institutional development must have as its central purpose the integration of these concepts into a viable arrangement for long-range planning. The institutional development plan is formulated directly in accord with the application of available evaluation data to system-wide objectives and is generalizable to all units of management within the institution. Designed to present alternate paths to a determinable future, it is based on several key assumptions:

*In the face of an uncertain future, administrators are sensitive to the need for planning and to identify alternative paths for institutional development.

*A basic measure of control can be exercised over the many factors that influence the educational process at any one point in the life of an institution.

*The educational process can be conceptualized in a cross-sectional and longitudinal research design and translated as a planning model into achievable language.

*A recognized decision making apparatus exists in every institution to convert evaluation findings into useful planning concepts.

*A plan for institutional development, once delimited, will be used by faculty and administrators to guide the further development of the institution through variable internal and external conditions.

Awareness of these assumptions is a prerequisite for the development of a conceptual foundation for the planning process. Regardless of how effective or ineffective the planning effort can be, failure to properly assess the political setting in which the process occurs will result in early termination of administrative

efforts to develop an institutional development plan.

Goal Setting

The first concept in the planning process is goal-setting. Organizing for effective planning requires a total conceptual framework beginning with a stated mission and ending with a systematic approach to operations. Most two-year colleges develop a general set of goals at an early stage in their development. Ideally these goals should be based on a defined awareness of community needs and should relate to specific time frames for their accomplishment. This by necessity involves a market analysis of community educational needs and their translation as an operational plan into the functions that staff must perform in support of stated goals.

Numerous market analysis models are available but they all are based on the general assumption that institutional goals should both follow and support the educational needs of the community. Figure 2 depicts the various steps in a market analysis. In every metropolitan region in the United States census data are available that describe the population in terms of characteristics such as age, sex, race, ethnicity, veterans status, occupational status, family income, education level and unemployment. These data provide comprehensive information that can be used to formulate institutional goals. Institutional objectives should follow directly from the statement of goals and should be stated in concrete performance terms. They typically define the types of population subgroups to be served and the types of programs to be offered.

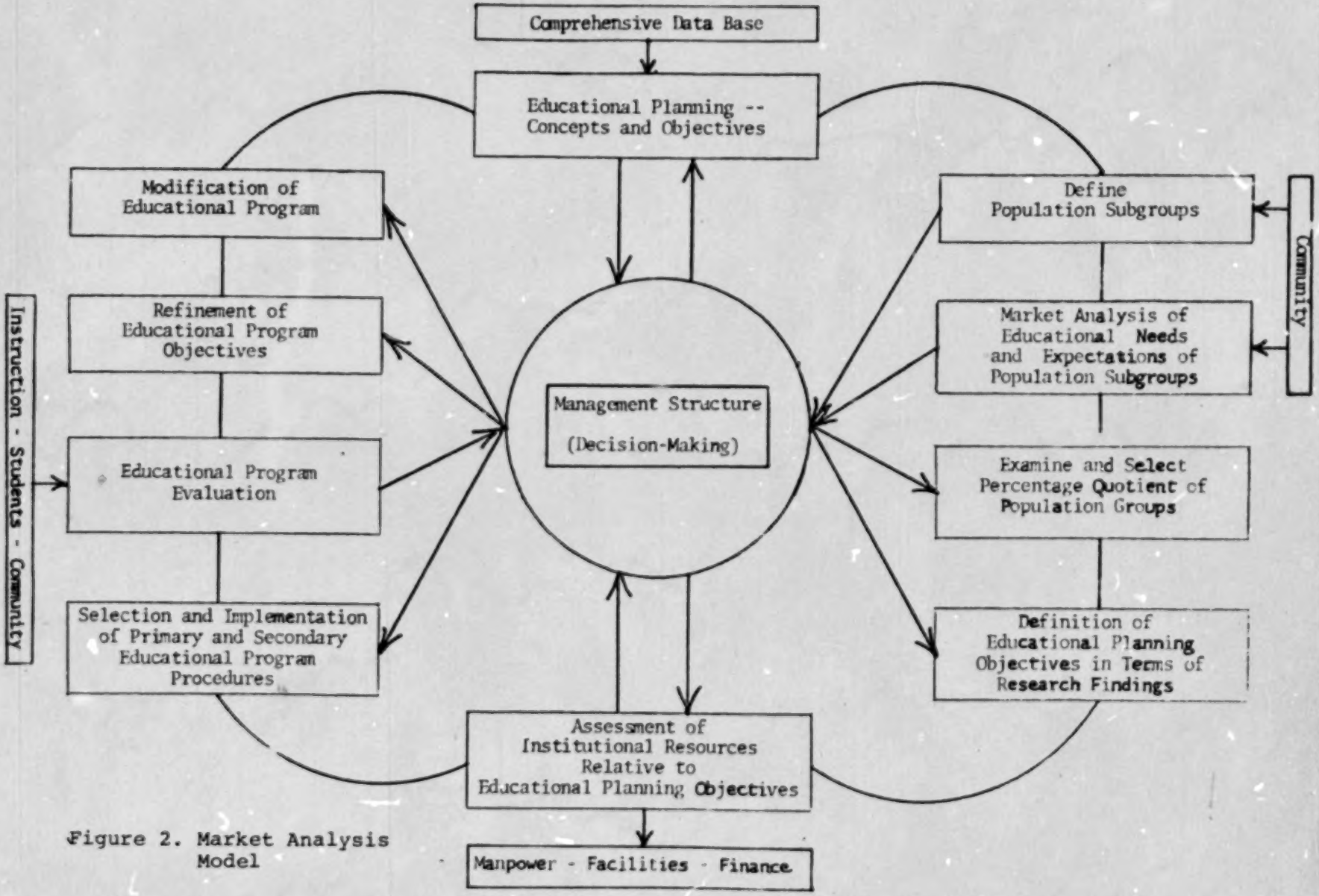
Comprehensive Data Base
Educational Planning -- Concepts and Objectives
Modification of Educational Program
Refinement of Educational Program Objectives
Educational Program Evaluation
Selection and Implementation of Primary and Secondary Educational Program Procedures
Define Population Subgroups
Market Analysis of Educational Needs and Expectations of Population Subgroups
Examine and Select Percentage Quotient of Population Groups
Definition of Educational Planning Objectives in Terms of Research Findings
Management Structure (Decision-Making)
Assessment of Institutional Resources Relative to Educational Planning Objectives
Manpower - Facilities - Finance
Instruction - Students - Community
Community

Figure 2. Market Analysis Model

Some examples of objectives are the following:

*To develop and implement a program in Climate Control Technology that will enroll 125 students for the 1975-1976 academic year.

*To increase enrollment in Liberal Arts by approximately 250 students for the 1975-1976 academic year.

*To open a reading tutorial program which will enroll approximately 300 or more students at the 10th grade reading level (or below) during the 1975-1976 academic year; terminal reading levels should enable students to perform in sequential communications curricula at an average of "C" or better.

The development of institutional objectives in concrete form carries forward the process through which planning is institutionalized. Administrators are able to appraise the educational program in the context of current resources and to measure institutional development against a series of short-range and long-range planning yardsticks.

Evaluation

The second concept in the planning process is the research design provided by a conceptual model of institutional functioning. Institutional objectives function in a constantly changing environment. The use of a conceptual model to organize and report complete parameters of institutional functioning is the only reliable means for measuring staff performance and program outputs in support of stated objectives. As information concerning the consequences of employing resources in certain areas becomes available, new objectives are formulated that serve to confirm or revise institutional direction. Planning is only as effective as the quality and comprehensiveness of the data upon which it is based. The development of a quality evaluation system is absolutely essential

for successful implementation of a long-range development plan of any type and is perhaps the single most important component in the institutional development plan.

In theory, institutional functioning consists of a series of activities designed to move students from one status to another. Astin and his associates have developed a model for research on college functioning that offers considerable promise for higher education institutions. In this model--what may be called an "input/output" model of college functioning--the background characteristics of entering students and environmental characteristics of the college and community are considered as "input" (see Figure 3). Included in this input, of course, are the entering or initial scores of students on the particular variable or variables under consideration, the objectives of the college, and descriptive measures of the college environment. An "expected" output theoretically at any time in the life of an instiution based on these input characteristics can be computed and the effect statistically removed from "observed" outputs of the educational process (actual scores on the variable or variables under investigation) producing a "residual"output which is independent of input characteristics. Measures of the characteristics of the college and the community can then be related to this residual output to appraise the functioning of the college. This process culminates in the formulation of evaluation measures which describe college functioning in terms of demonstrable change in educational outputs as well as the effectiveness of the institution in producing conditions which lead to change.

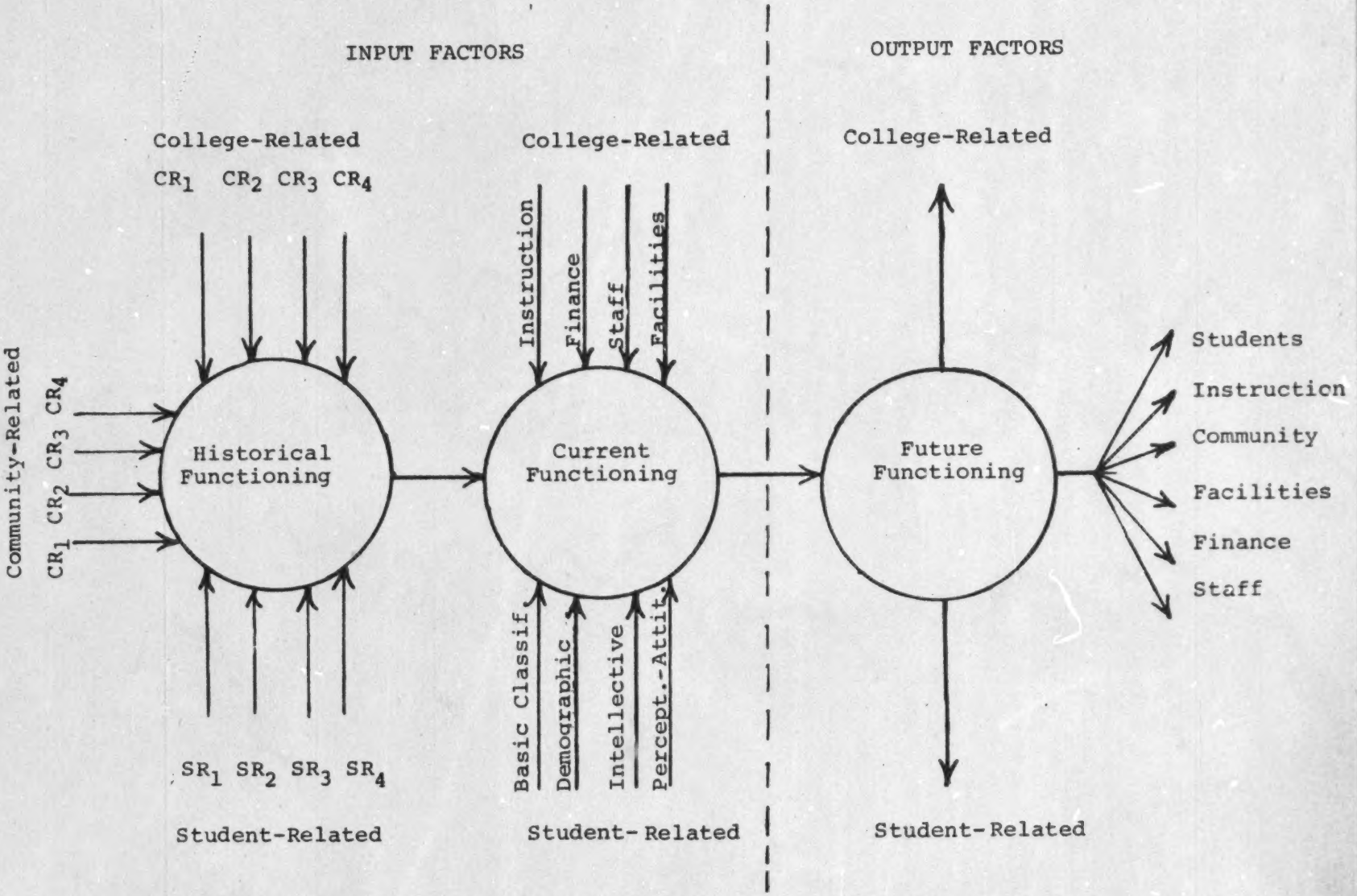

Figure 3. Input-Output Model of Institutional Functioning.

Output measures are computed for three different intervals in the life of an institution: the current academic year period, the preceding five-year period, and five years into the future. Statistical measures used to assess outputs are presented in Appendix I. These measures are designed to describe central elements of institutional functioning in terms of goal setting, program review, and cost analysis subsystems--each capable of being broken down into various data bases (i.e., students, instruction, facilities, community, finance and manpower) and different levels of analysis (i.e., institutional, program, department and individual). The first subsystem, goal setting, involves the classification of institutional objectives and the establishment of an integrated set of goals as a prerequisite to any form of comprehensive evaluation. The second subsystem, program review, is used to appraise the quality of programs and the performance of staff and to validate the level of effectiveness currently assumed in fixed-effectiveness analyses. Program reviews are not new but they generally are used only in conjunction with accreditation where the objective is to protect the institution and to certify its quality. Finally the cost analysis subsystem responds to management needs for gross quantitative measures of the cost effectiveness of present operations and estimates of the consequences of various decision alternatives. Analyses of this type examine the quantity of output and produce a unit cost for each operation.

Each subsystem, depending upon its utility and purpose, involves certain types of data. The planning process requires numerous definitions establishing relationships between multiple evaluation measures for any one subject. If projections related

to curriculum program growth are required, the problem can be approached through systematic analysis of twenty data elements descriptive of curriculum outputs at four levels of analysis in the instruction component of the program review subsystem. Multiple year trendlines are constructed that define historical changes in the output of educational programs. If the current structure of institutional goals and objectives is reflective of changes in program output, the linkage between goal setting and evaluation systems is sound and trendline data can be used to produce alternate projections for institutional development. If evidence of congruency is not present, efforts will need to be made to renorm the educational process and to equilibrate current institutional goals with stated evaluation findings. The absence of a basic measure of congruency essentially serves to forestall the utility of the planning process.

Multiple data elements combined with an attempt to redefine and modify institutional goals at various levels of analysis encourages the conversion of evaluation information into useful planning concepts. The problem is to determine just how this conversion will occur.

Unanswered Questions

The conversion of evaluation data into planning concepts is the crux of the institutional development plan. A formal plan does not simply follow from the existence of institutional goals and evaluation data. Whether at the two-year or four-year college, there are persistent problems in planning just as there are persistent results. First and foremost, and for many reasons, there is a lack

of management sensitivity to the need for converting institutional data--past, present, and future--into planning concepts. Once data are in hand regarding program outcomes, management guidelines are necessary for their translation into planning alternatives. This involves system-wide priorities and requires that administrators maintain some form of decision making apparatus for the conversion of data into action.

Many administrators have failed to attend to this need and lapse into lethargy when the realization sinks in that they must assume an active leadership role if planning is to be successful. The absence of a decision making apparatus culminates in a hard core of unanswered questions which plague the educational planner: What are the uses of evaluation data in higher education institutions? What procedures should be used in the conversion of data into action programs? Who should be responsible for assessing the implications of various data trends and advising management of decision alternatives? What is an appropriate balance between politics and planning in the planning process? How can evaluation data be used to "improve" the educational program? What is the value of planning in an institutional setting in which political concerns constantly overide planning alternatives? Satisfactory answers to these and other questions will be required if two-year colleges are to successfully engage in planning.

Figure 4 represents a graduated decision making model that can be used in the conversion of evaluation findings into planning concepts. The reader will immediately recognize in this schematic the characteristic of competing staff interest which has proven

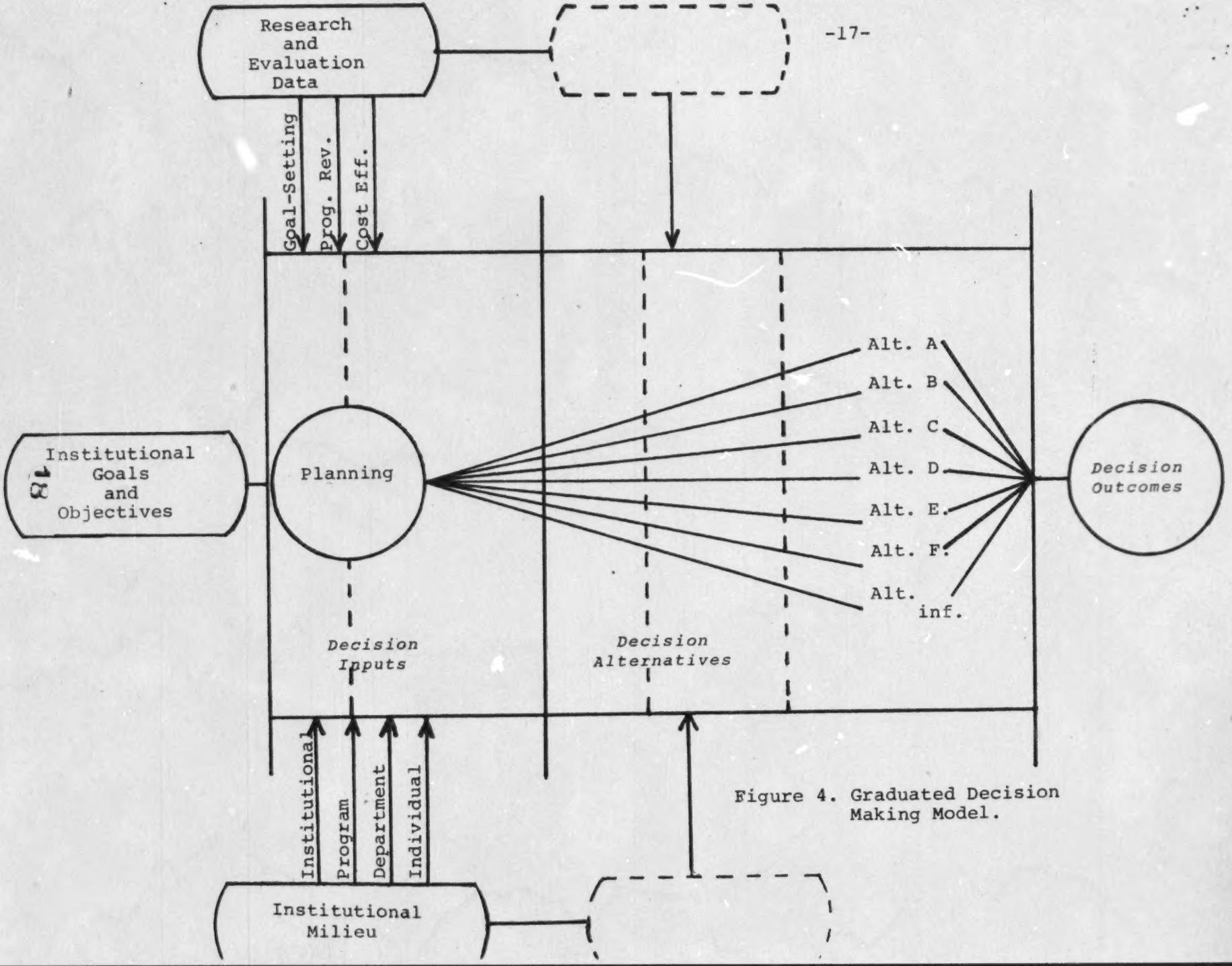

Figure 4. Graduated Decision Making Model.

so dysfunctional for higher education institutions. Ideally, planning is a graduated process that involves the making of decisions that strike an even balance between political "considerations" on the one hand and evaluation data on the other. Too often, however, political expediency has been the dominant force in decision making with research recommendations simply a superficial adjunct to the process. The influence of research is either limited to window dressing for terminal decisions or to indirect influence on administrators through the naive political machinations of research specialists. This is most evident in the uncanny ability of administrators to manipulate evaluation findings into a framework congruent with their value expectations. The result is the isolation of research from decision making and the loss of credibility for planning as a useful tool in the management enterprise.

In the absence of a decision making apparatus to convert evaluation data into planning concepts, the planning process is fragmented with no central integrating mechanism. This results in a pattern of vested interests that more often than not lacks credibility as an objective base for planning. The graduated decision making model by design is sensitive to the political climate within which the institution functions as well as to the need for time in which to develop decision alternatives. It is designed to elicit alternative paths for institutional development as the product of available evaluation data. It does not assume that the values and interests of college constituencies will be congruent with available data but it does assume that administrators will be able to achieve concensus with regard to inputs into the planning process.

Institutional constituencies, depending upon their numerical size and internal cohesiveness, bring different value perspectives to the planning process. To the extent that these different value perspectives are identified and understood, long-range planning can be effective as a guide to institutional development. The decision making model, by posing different potential outcomes of evaluation findings to faculty and administrators, can be used to force concensus regarding long-range development. Using available evaluation data in combination with stated institutional goals and staff input, multiple alternatives for institutional development are constructed. These alternatives range from that which represents a pure political solution to the task ahead to that which represents a data-based approach to long-range planning. The probable solution likely rests somewhere in the middle but simply the task itself of identifying potential alternatives is sufficient to point faculty and administrators in the direction of planning.

Outcome alternatives that are defined in such a way as to make development priorities clearly evident will, in the context of limited resources, become the focus of institutional change. The institutional development plan is the formal representation of these alternatives. It contains a summary description of decision alternatives, the resources necessary to implement to these alternatives, and institutional preferences with regard to the desirability of particular alternatives.

Framework of the Plan

The framework for the institutional development plan has as its main focus the formulation of new junctures between institutional

objectives and evaluation findings. Given alternative outcomes of evaluation data, new objectives are required that bind faculty and administrators in the pursuit of relevant system-wide goals. Figure 5 represents a model for this task. Beginning with system-wide goals, new objectives are formulated that become a source of direction for staff as well as for determining the effectiveness with which resources are used. Institutional objectives are defined within the context of the graduated decision making model and are comprised of inputs from both external and internal constitutuencies. Using these objectives as a reference point, each functional level within the administrative structure must define alternative methods for achieving special objectives to guide the employment of resources and to provide a means for evaluation. Failure to develop clear and orderly methods for achieving objectives permits staff to pursue different and in some instances conflicting priorities and contributes to an emphasis upon the personality of role incumbents. It makes evaluation difficult or impossible, and it creates the environment for innumerable intrainstitutional conflicts.

The most critical phase in the institutional development plan is the identification of evaluation criteria that can be used to determine the extent to which alternative methods are successful in achieving planning objectives. Attention must be paid to the nature of data that will be collected to support criteria, as well as to the means for collecting, reporting, and interpreting such data. As information concerning the consequences of employing certain alternative methods is tabulated, a renorming process is

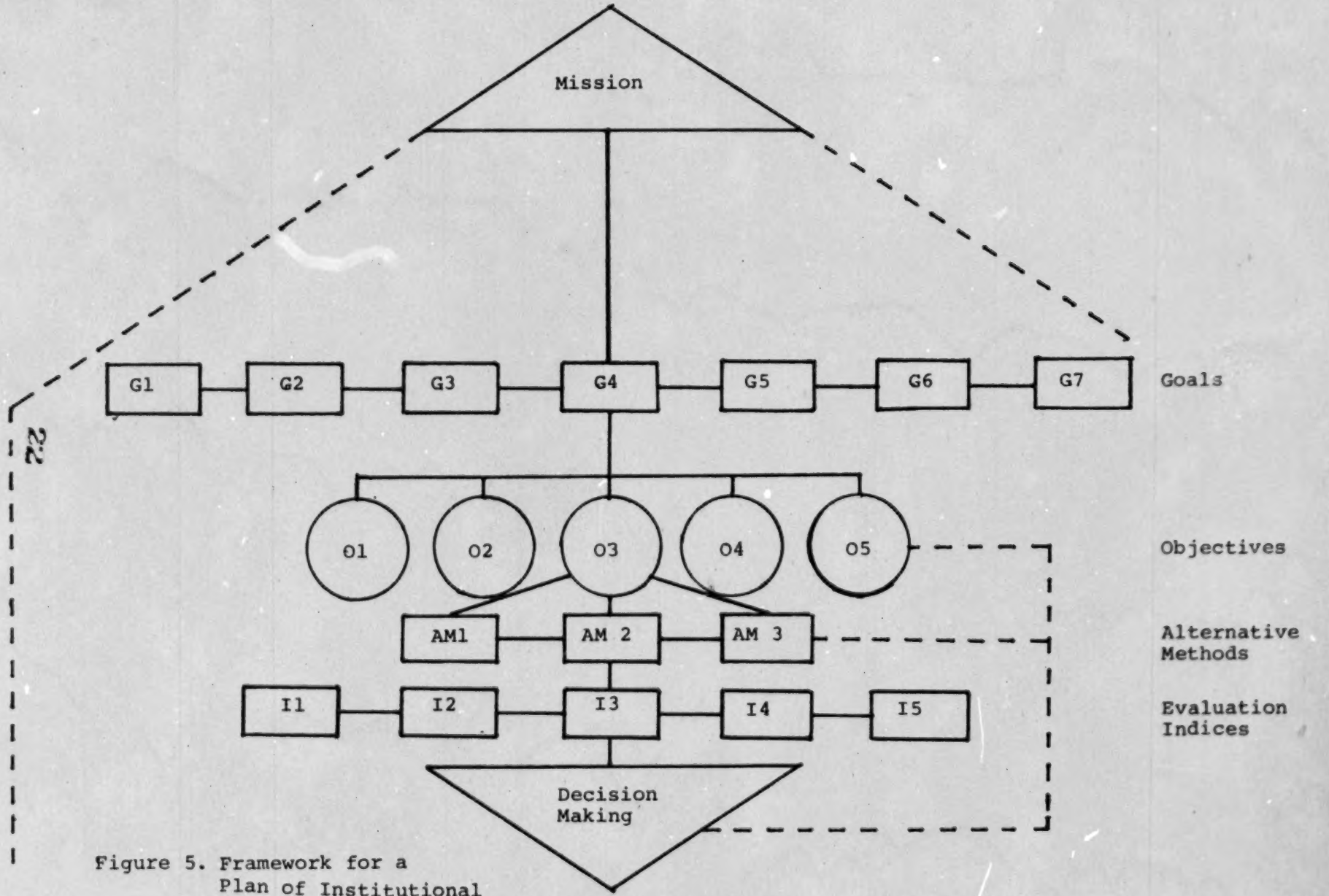

Figure 5. Framework for a Plan of Institutional Development.

initiated; new objectives and methods are formulated; and adjustments are made in the decision making process to confirm or revise institutional direction.

The phases defined above, with the insertion of appropriate procedures, make up the substance of the institutional development plan. They are valid whether or not the data they report are congruent with administrative and faculty expectations. The focus of the plan must by necessity be to provide the college with alternatives for development that will help it to adjust to emerging social conditions. Anything else--overemphasis upon the political values of faculty and administrators or emphasis on esoteric research directed to peripheral phenomena will result in negligence of higher order institutional needs and will doom the planning effort to failure.

The concepts underlying a plan for institutional development require thought, commitment, and evaluation. Such a plan is not intended for use only as a readily available means for pacification of external agencies nor is it intended for use as a release mechanism for faculty and administrators who prefer to deal with difficult issues by relegating them to abstract-thinking planners. The institutional development plan is a necessary response to conditions which challenge the future of American colleges and universities. It should not be treated lightly. Indeed, it may offer more than its early promise if faculty and administrators are willing to come to grips with the many issues that plague higher education institutions in the steady state.

Appendix I

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
Goal Setting						
Students						
career preparation		X	X			
general education		X	X			
university parallel preparation		X	X			
personal development		X	X			
basic skills education		X	X			
Instruction						
multi-modal instruction		X	X			
learning objectives and support services		X	X			
monitoring systems		X	X			
Community						
service to educational, vocational, social and cultural needs		X	X			

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
expanded access		X	X			
Facilities						
space requirements conducive to learning		X	X			
facilities extended to community: "community is campus"		X	X			
Finance						
financial support is adequate to meet institutional objectives		X	X			
Manpower						
staffing adequate to meet student and community needs		X	X			
Program Review						
Students						
rate of participation in student development programs	X			X	X	X
use of campus facilities	X		X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institution	Program	Dept./ Div.	Individual
average section size	X		X	X	X	X
credit hours successfully completed	X		X	X	X	X
distribution of grades	X		X	X	X	X
performance in sequential courses	X	X	X	X	X	X
academic honors	X	X	X	X	X	X
academic probation or dismissal	X	X	X	X	X	X
transfer of credits to other institutions	X	X	X	X	X	X
academic performance in other institutions	X	X	X	X	X	X
occupational placement of graduates	X	X	X	X	X	X
job performmance of graduates	X	X	X	X	X	X
certification and/or licensure scores of graduates	X	X	X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institution	Program	Dept./ Div.	Individual
use of college instructional support facilities	X			X	X	X
academic achievement	X		X	X	X	X
change of major field	X		X	X	X	X
withdrawal from college	X	X	X	X	X	X
"stop-out"	X	X	X	X	X	X
incidence of transfer to other institutions	X	X	X	X	X	X
graduation	X	X	X	X	X	X
employment patterns	X	X	X	X	X	X
perception of college characteristics		X	X	X	X	X
Instruction						
enrollment in programs	X		X	X	X	X
student credit hours generated	X		X	X	X	X
student contact hours	X		X	X	X	X
faculty-student ratio	X		X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institution	Program	Dept./ Div.	Individual
student perceptions of curriculum effectiveness		X	X	X	X	X
student perceptions of instructor effectiveness		X	X	X	X	X
faculty perception of student performance		X	X	X	X	X
employer evaluation of graduating student performance and preparation		X	X	X	X	X
lay advisory committee perceptions of program effectiveness		X	X	X	X	X
Community						
relationship of institutional programs to community needs	X		X	X	X	X
enrollment of different community subgroups in programs	X	X	X	X	X	X
community perceptions of college programs		X	X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institution	Program	Dept./ Div.	Individual
sequential enrollment in programs	X	X	X	X	X	X
Facilities						
space utilization	X		X	X	X	X
classroom						
labs						
students						
auxiliary						
percentage utilization of available instructional space	X		X	X	X	X
square footage of useable instructional space per FTE student	X		X	X	X	X
community use of college facilities	X	X	X	X	X	X
college use of community facilities	X	X	X	X	X	X
Finance						
projected versus actual cost per FTE student	X		X	X	X	X
projected versus actual cost per administrative department	X		X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
analysis of line item expenditures	X		X	X	X	X
analysis of trends in resource allocation within departments	X		X	X	X	X
Manpower						
administrator performance in compliance with management objectives	X	X	X	X	X	X
faculty performance						
number of visits, lectures, etc. in local community		X	X	X	X	X
student perceptions of teaching effectiveness		X	X	X	X	X
sequential performance of students	X	X	X	X	X	X
peer ratings		X	X	X	X	X
publications		X	X	X	X	X
committee work	X	X	X	X	X	X
community service projects		X	X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
professional awards and honors		X	X	X	X	X
external rating of departmental effectiveness	X	X	X	X	X	
management information	X		X	X	X	X
administrative ratings	X	X	X	X	X	X
compliance with professional development plans	X	X		X	X	X
use of multi-model instructional techniques	X	X	X	X	X	X
Cost Analysis						
Students						
institutional costs per FTE student	X		X	X	X	
revenue support per FTE student student fees state aid financial aids	X		X			

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
Instruction						
unit cost per FTE student	X		X	X	X	
instructional cost	X		X	X	X	X
cost of instructional materials and equipment	X		X	X	X	X
energy and maintenance costs	X		X	X	X	X
instructional support staff and services	X		X	X	X	X
Community						
unit cost of community educational programs and services	X		X	X	X	
cost of institution	X		X			
cost of facilities	X					
cost of instructional support services	X		X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
revenue support for community educational program	X		X	X	X	
student fees	X		X			
state aid	X		X			
federal or regional grants	X		X			
Finance						
relationship of budget revenues to budget expenditures	X		X	X	X	
Facilities						
plant construction or modification	X		X	X	X	
cost of equipment	X		X	X	X	
maintenance and energy costs	X		X	X	X	
security and safety costs	X		X	X	X	
rental costs						
Manpower						
administrative costs	X		X	X	X	X
salaries	X		X	X	X	X

Subsystem and Data Components	Dimension		Level of Analysis			
	Fixed-Effectiveness	Value-Added	Institutional	Program	Dept./ Div.	Individual
benefits	X		X	X	X	X
staff support services	X		X	X	X	X
facilities utilization	X		X	X	X	X
travel	X		X	X	X	X
instructor costs	X		X	X	X	X
salaries	X		X	X	X	X
benefits	X		X	X	X	X
staff support services	X		X	X	X	X
facilities utilization	X		X	X	X	X
travel	X		X	X	X	X
board of trustees, external community agencies, and consultant costs	X		X	X	X	

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